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05725.0553

U.S. Application No.

09/509315

TRANSMITTAL LETTER TO THE UNITED STATES
 DESIGNATED/ELECTED OFFICE (DO/EO/US)
 CONCERNING A FILING UNDER 35 U.S.C. 371

| | | |
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| International Application No. PCT/FR98/01922 | International Filing Date September 9, 1998 | Priority Date Claimed September 25, 1997 |
|---|--|---|

Title of Invention: DETERGENT COSMETIC COMPOSITIONS AND USE

Applicants For DO/EO/US: 1) Sandrine DECOSTER and 2) Bernard BEAUQUAY

Applicants herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. has been transmitted by the International Bureau.
 - c. is not required, as the application was filed in the United States Receiving Office (RO/US).
6. A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. have been transmitted by the International Bureau.
 - c. have not been made; however, the time limit for making such amendments has NOT expired.
 - d. have not been made and will not be made.
8. A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. A FIRST preliminary amendment.
- A SECOND or SUBSEQUENT preliminary amendment.
14. A substitute specification.
15. A change of power of attorney and/or address letter.
16. Other items or information:
 - a. Verified Small Entity Statement.
 - b. Copy of Notification of Missing Requirements.

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17. [X] The following fees are submitted:

Basic National Fee (37 CFR 1.492(a)(1)-(5)):

Search Report has been prepared by the EPO or JPO.....\$840.00 \$840.00

International preliminary examination fee paid to

USPTO (37 CFR 1.482).....\$670.00

No international preliminary examination fee paid to

USPTO (37 CFR 1.482) but international search fee

paid to USPTO (37 CFR 1.445(a)(2)).....\$690.00

Neither international preliminary examination fee

(37 CFR 1.482) nor international search fee

(37 CFR 1.445(a)(2)) paid to USPTO.....\$970.00

International preliminary examination fee paid to USPTO

(37 CFR 1.482) and all claims satisfied provisions

of PCT Article 33(1)-(4).....\$ 96.00

ENTER APPROPRIATE BASIC FEE AMOUNT = \$840.00Surcharge of \$130.00 for furnishing the oath or declaration later than
[] 20 [] 30 months from the earliest claimed priority date
(37 CFR 1.492(e)). \$

| Claims | Number Filed | Number Extra | Rate |
|---|--------------|--------------|--------------|
| Total Claims | 16-20= | 0 | X \$18.00 \$ |
| Independent Claims | 1 - 3= | 0 | X \$78.00 \$ |
| Multiple dependent claim(s) (if applicable) | | | +\$260.00 \$ |

TOTAL OF ABOVE CALCULATIONS = \$ 840.00Reduction by 1/2 for filing by small entity, if applicable. Verified
Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28) \$

| | | SUBTOTAL = \$ 840.00 |
|---|------|----------------------|
| Processing fee of \$130.00 for furnishing the English translation later | than | \$ |
| [] 20 [] 30 months from the earliest claimed priority date | | \$ |
| <u>(37 CFR 1.492(f)).</u> | | + |

| | | TOTAL NATIONAL FEE = \$ 840.00 |
|---|------------|---------------------------------|
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The | assignment | \$ |
| must be accompanied by an appropriate cover sheet | | \$ |
| <u>(37 CFR 3.28, 3.31).</u> | | +\$40.00 per property + \$ |
| | | TOTAL FEES ENCLOSED = \$ 840.00 |

| | | Amount to be |
|--|--|--------------|
| | | refunded \$ |
| | | charged \$ |

a. [X] A check in the amount of \$ 840.00 to cover the above fees is enclosed.
 b. [] Please charge my Deposit Account No. _____ in the amount of

\$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [X] The Commissioner is hereby authorized to charge any additional fees
 which may be required, or credit any overpayment to Deposit Account
 No. 06-0916. A duplicate copy of this sheet is enclosed.

The Commissioner is hereby authorized to charge any other fees due under 37 C.F.R. §1.16
 or §1.17 during the pendency of this application to our Deposit Account No. 06-0916.

SEND ALL CORRESPONDENCE TO:
 Finnegan, Henderson, Farabow
 Garrett & Dunner, L.L.P.
 1300 I Street, N.W.
 Washington, D.C. 20005-3315
 EFC/FPD/sci



Ernest F. Chapman
 Reg. No. 25,961

Submitted: March 24, 2000

DETERGENT COSMETIC COMPOSITIONS AND USE

The present invention relates to novel cosmetic compositions with improved properties intended simultaneously for cleaning and conditioning the hair 5 and comprising, in a cosmetically acceptable vehicle, a washing base composed of surfactants with a detergent power, in which base are also present, as conditioning agents, cationic polymers in combination with a specific amine-comprising silicone. The invention also 10 relates to the use of the said compositions in the abovementioned cosmetic application.

The use of detergent compositions (or shampoos, based essentially on conventional surface-active agents of, in particular, anionic, non-ionic 15 and/or amphoteric type but more particularly of anionic type is commonplace in the cleaning and/or washing of hair. These compositions are applied to wet hair and the foam generated by massaging or rubbing with the hands makes it possible, after rinsing with water, to 20 remove the varied dirt initially present in the hair.

These base compositions certainly possess a good washing power but the intrinsic cosmetic properties which are attached thereto however remain fairly weak, in particular due to the fact that the 25 relatively aggressive nature of such a cleaning treatment can in the long term cause more or less marked damage to the capillary fibre, related in

particular to the gradual removal of the lipids or proteins present in or at the surface of the latter.

Thus, in order to improve the cosmetic properties of the above detergent compositions and more particularly of those which are required to be applied to sensitive hair (i.e. hair which is damaged or embrittled, in particular under the chemical action of atmospheric agents and/or of hair treatments, such as permanent waves, dyeings or bleachings), it is now usual to introduce, into the latter, additional cosmetic agents, known as conditioning agents, intended mainly to repair or restrict the harmful or undesirable effects induced by the various treatments or attacks which capillary fibres are more or less repeatedly subjected to. These conditioning agents can, of course, also improve the cosmetic behaviour of natural hair.

The conditioning agents which are most commonly used currently in shampoos are cationic polymers, silicones and/or silicone derivatives, because these confer, on washed, dry or wet hair, an ease of disentangling, a softness and a sleekness which are increased with respect to that which can be obtained with the corresponding cleaning compositions which are devoid of them. In addition, it is known to preferably use a mixture of silicone and of cationic polymer on sensitive hair.

However, and despite the progress recently made in the field of shampoos based on cationic

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polymers and on silicone, these are not really completely satisfactory.

- This is because the abovementioned cosmetic advantages are unfortunately also accompanied, on dried hair, by certain cosmetic effects which are considered to be undesirable, namely lankness of the hairstyle (lack of lightness of the hair), lack of sleekness (individual hair nonhomogeneous from the root to the tip) and insufficient sheen.
- 10 In addition, the use of cationic polymers for this purpose exhibits various disadvantages. Due to their strong affinity for hair, some of these polymers are deposited to a significant extent during repeated use and result in undesirable effects, such as an
15 unpleasant and heavy feel, stiffening of the hair and interfibre adhesion, affecting the styling. These disadvantages are accentuated in the case of fine hair, which lacks liveliness and body.

Thus, a strong need still currently exists
20 with regard to being able to have available novel products exhibiting a better performance with regard to one or more of the cosmetic properties mentioned above.

The present invention is targeted at overcoming these disadvantages.

25 Thus, following significant research carried out on the subject, it has now been found by the Applicant Company, entirely unexpectedly and surprisingly, that by using a specific and suitably

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selected amine-comprising silicone as defined below in detergent compositions comprising conventional cationic polymers as conditioning agents, it is possible to limit, indeed even eliminate, the problems generally related to the use of such compositions, namely, in particular, lankness and lack of sleekness and of softness of the hair, while retaining the other advantageous cosmetic properties which are attached to compositions based on conditioning agents, in particular their good intrinsic washing power.

The compositions in accordance with the invention confer on hair, after rinsing, a notable treating effect which is expressed in particular by an ease of disentangling as well as a contribution of body, of lightness, of sleekness, of softness and of suppleness.

All these discoveries form the basis of the present invention.

Thus, according to the present invention, novel detergent and conditioning compositions are now provided comprising, in a cosmetically acceptable medium, (A) a washing base and (B) a conditioning system comprising at least one cationic polymer and at least one amine-comprising silicone with a weight-average molecular mass of between 11,000 and 25,000.

Another subject-matter of the invention is the use in cosmetics of the above compositions for

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cleaning and conditioning keratinous substances, in particular the hair.

However, other characteristics, aspects and advantages of the invention will become still more 5 clearly apparent on reading the description which follows and the concrete but in no way limiting examples intended to illustrate it.

As indicated above, the essential components entering into the composition of the products according 10 to the invention are (A) a washing base and (B) a conditioning system comprising (i) the cationic polymer or polymers and (ii) the specific amine-comprising silicone or silicones.

15 A - WASHING BASE:

The compositions in accordance with the invention necessarily comprise a washing base, generally an aqueous washing base.

The surfactant or surfactants forming the 20 washing base can be chosen without distinction, alone or as mixtures, from anionic, amphoteric, non-ionic, zwitterionic and cationic surfactants.

However, according to the invention, the washing base preferably comprises anionic surfactants 25 or mixtures of anionic surfactants and of amphoteric surfactants and, more preferentially still, comprises only this type of surfactant or mixture of surfactants.

The minimum amount of washing base is that just sufficient to confer a satisfactory foaming and/or detergent power on the final composition, and excessively large amounts of washing base do not really 5 contribute additional advantages.

Thus, according to the invention, the washing base can represent from 4% to 50% by weight, preferably from 8% to 35% by weight and more preferentially still from 10% to 25% by weight of the total weight of the 10 final composition.

The surfactants which are suitable for implementing the present invention are in particular the following:

(i) Anionic surfactant(s):

15 Their nature does not assume a really critical character within the context of the present invention.

Thus, by way of example of anionic surfactants that can be used, alone or [lacuna] 20 mixtures, in the context of the present invention, there may be mentioned in particular (non-limiting list) the salts (in particular alkali metal, especially sodium, salts, ammonium salts, amine salts, aminoalcohol salts or magnesium salts) of the following 25 compounds: alkyl sulphates, alkyl ether sulphates, alkylamido ether sulphates, alkylarylpolyether sulphates, monoglyceride sulphates; alkylsulphonates, alkyl phosphates, alkylamidesulphonates, alkylaryl-

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sulphonates, α -olefinsulphonates, paraffinsulphonates; alkyl sulphosuccinates, alkyl ether sulphosuccinates, alkylamidesulphosuccinates; alkyl sulphosuccinamates; alkyl sulphoacetates; alkyl ether phosphates;

5 acylsarcosinates; acylisethionates and N-acyltaurates, the alkyl or acyl radical of all these different compounds preferably comprising from 12 to 20 carbon atoms, and the aryl radical preferably denoting a phenyl or benzyl group. Among the anionic surfactants

10 which are further usable, there may also be mentioned the salts of fatty acids, such as the salts of oleic, ricinoleic, palmitic and stearic acids, the acids of copra oil or of hydrogenated copra oil, and acyllactylates in which the acyl radical comprises 8 to

15 20 carbon atoms. It is also possible to use weakly anionic surfactants, like alkyl-D-galactosideuronate acids and salts thereof, as well as polyoxyalkylenated ether carboxylic acids and salts thereof, in particular those comprising from 2 to 50 ethylene oxide groups,

20 and mixtures thereof. The anionic surfactants of the polyoxyalkylenated ether carboxylic acid or salt type are in particular those which correspond to the following formula (1):



25 in which:

R_1 denotes an alkyl or alkaryl group and n is an integer or decimal number (mean value) which can vary from 2 to 24 and preferably from 3 to 10, the alkyl radical

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having between 6 and 20 carbon atoms approximately and aryl preferably denoting phenyl,

A denotes H, ammonium, Na, K, Li, Mg or a monoethanolamine or triethanolamine residue. Use may 5 also be made of mixtures of compounds of formula (1), in particular mixtures in which the R₁ groups are different.

Among the anionic surfactants, it is preferable to use, according to the invention, alkyl 10 sulphate and alkyl ether sulphate salts and mixtures thereof.

(ii) Non-ionic surfactant(s):

The non-ionic surface-active agents themselves are also compounds which are well known per 15 se (in this respect see in particular the "Handbook of Surfactants" by M.R. Porter, published by Blackie & Son (Glasgow and London), 1991, pp. 116-178) and, in the context of the present invention, their nature does not assume any critical character. They can thus be chosen 20 especially from (non-limiting list) fatty alcohols, alpha-diols, alkylphenols or acids which are polyethoxylated, polypropoxylated or polyglycerolated, having a fatty chain comprising, for example, 8 to 18 carbon atoms, it being possible for the number of 25 ethylene oxide or propylene oxide groups to range especially from 2 to 50 and it being possible for the number of glycerol groups to range especially from 2 to 30. Mention may also be made of the copolymers of

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ethylene and propylene oxide and the condensates of ethylene and propylene oxide with fatty alcohols; the polyethoxylated fatty amides preferably having from 2 to 30 mol of ethylene oxide, the polyglycerolated fatty amides on average comprising 1 to 5 glycerol groups and in particular 1.5 to 4; the polyethoxylated fatty amines preferably having 2 to 30 mol of ethylene oxide; the oxyethylenated esters of sorbitan fatty acids having from 2 to 30 mol of ethylene oxide; the sucrose esters of fatty acids, the polyethylene glycol esters of fatty acids, alkylpolyglycosides, the N-alkylglucamine derivatives, or amine oxides, such as the oxides of (C_{10} - C_{14})alkylamines or the N-acylamino-propylmorpholine oxides. It will be noted that alkylpolyglycosides constitute non-ionic surfactants which enter particularly well into the scope of the present invention.

(iii) Amphoteric or zwitterionic

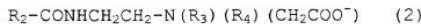
surfactant(s):

The amphoteric or zwitterionic surface-active agents, the nature of which does not assume any critical character in the context of the present invention, may be especially (non-limiting list) derivatives of aliphatic secondary or tertiary amines in which the aliphatic radical is a linear or branched chain comprising 8 to 18 carbon atoms and comprising at least one water-solubilizing anionic group (for example carboxylate, sulphonate, sulphate, phosphate or

phosphonate); (C_8-C_{20})alkyl betaines, sulphobetaines, (C_8-C_{20})alkyl amido(C_1-C_6)alkyl betaines or (C_8-C_{20})alkyl amido(C_1-C_6)alkyl sulphobetaines may further be mentioned.

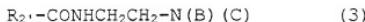
- 5 Among the amine derivatives, there may be
mentioned products sold under the name Miranol, as
described in Patents US-2,528,378 and US-2,781,354 and
classified in the CTFA dictionary, 3rd edition, 1982,
under the names Amphocarboxyglycinates and
10 Amphocarboxypropionates with respective structures:

10 Amphocarboxypropionates with respective structures:



in which: R₂ denotes an alkyl radical of an acid R₂-COOH

- 15 present in hydrolysed copra oil, a heptyl, nonyl or
undecyl radical, R₃ denotes a beta-hydroxyethyl group
and R₄ a carboxymethyl group;
and



- 20 in which:

B represents $-\text{CH}_2\text{CH}_2\text{OX}'$, C represents $-(\text{CH}_2)_z\text{-Y}'$, with
 $z = 1$ or 2 .

X' denotes the $-\text{CH}_2\text{CH}_2\text{-COOH}$ group or a hydrogen atom

- 25 Y' denotes -COOH or the radical -CH₂-CHOH-SO₃H
 R₂· denotes an alkyl radical of an acid R₉-COOH present
 in copra oil or in hydrolysed linseed oil, an alkyl

radical, in particular C₇, C₉, C₁₁ or C₁₃, a C₁₇ alkyl radical and its iso form or an unsaturated radical C₁₇.

By way of example, there may be mentioned the cocoamphocarboxyglycinate sold under the trade name

- 5 Miranol C2M concentrated by the Company Miranol.

(iv) Cationic surfactants:

Among the cationic surfactants, there may be mentioned in particular (non-limiting list): the salts of optionally polyoxalkylenated primary, secondary or

- 10 tertiary fatty amines; quaternary ammonium salts, such as tetraalkylammonium, alkylamidoalkyltrialkylammonium, trialkylbenzylammonium, trialkylhydroxyalkylammonium or alkylpyridinium chlorides or bromides; imidazoline derivatives; or amine oxides of cationic nature.

- 15 It will be noted that the cationic surfactants, the use of which is not ruled out, do not constitute preferred surfactants for making use of the present invention.

B - CONDITIONING SYSTEM

20

(i) Cationic polymer(s)

The compositions according to the invention, in addition, necessarily comprise a cationic polymer.

- 25 The conditioning agents of cationic polymer type which can be used in accordance with the present invention can be chosen from all those already known per se as improving the cosmetic properties of hair treated with detergent compositions, namely, in

particular, those disclosed in Patent Application EP-A 0,337,354 and in French Patent Applications FR-A-2,270,846, 2,383,660, 2,598,611, 2,470,596 and 2,519,863.

5 More generally still, within the meaning of the present invention, the expression "cationic polymer" denotes any polymer comprising cationic groups and/or groups which can be ionized to cationic groups.

10 The preferred cationic polymers are chosen from those which comprise units comprising primary, secondary, tertiary and/or quaternary amine groups, which can either form part of the main polymer chain or be carried by a side substituent directly connected to the latter.

15 The cationic polymers used generally have a number [lacuna] molecular mass of between 500 and 5×10^6 approximately and preferably of between 10^3 and 3×10^6 approximately.

Mention may more particularly be made, among
20 cationic polymers, of quaternized proteins (or protein hydrolysates) and polymers of the polyamine, polyaminoamide and poly(quaternary ammonium) type.
These are known products.

The quaternized proteins or protein
25 hydrolysates are in particular chemically modified polypeptides carrying quaternary ammonium groups at the chain end or grafted onto the chain. Their molecular mass can vary, for example, from 1500 to 10,000 and in

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particular from 2000 to 5000 approximately. Mention may in particular be made, among these compounds, of:

- collagen hydrolysates carrying triethylammonium groups, such as the products sold under the name "Quat-5 Pro E" by the Company Maybrook and called, in the CTFA dictionary, "Triethonium Hydrolyzed Collagen Ethosulphate";
 - collagen hydrolysates carrying trimethylammonium and trimethylstearylammmonium chloride groups, sold 10 under the name of "Quat-Pro S" by the Company Maybrook and called, in the CTFA dictionary, "Steartrimonium Hydrolyzed Collagen";
 - animal protein hydrolysates carrying trimethylbenzylammonium groups, such as the products 15 sold under the name "Crotein BTA" by the Company Croda and called, in the CTFA dictionary, "Benzyltrimonium Hydrolysed Animal Protein";
 - protein hydrolysates carrying, on a polypeptide chain, quaternary ammonium groups comprising at least 20 one alkyl radical having from 1 to 18 carbon atoms.

Mention may be made, among these protein hydrolysates, inter alia, of:

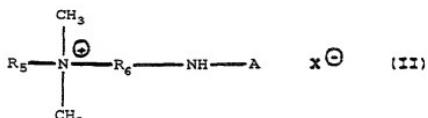
- "Croquat® L", the quaternary ammonium groups of which comprise a C₁₂ alkyl group;
 - 25 - "Croquat® M", the quaternary ammonium groups of which comprise C₁₀-C₁₈ alkyl groups;
 - "Croquat® S", the quaternary ammonium groups of which comprise a C₁₈ alkyl group;

- "Crotein® Q", the quaternary ammonium groups of which comprise at least one alkyl group having from 1 to 18 carbon atoms.

These various products are sold by the

- 5 Company Croda.

Other quaternized proteins or hydrolysates are, for example, those corresponding to the formula:



- in which X^- is an anion of an organic or inorganic acid,
- 10 A denotes a protein residue derived from collagen protein hydrolysates, R_5 denotes a lipophilic group comprising up to 30 carbon atoms and R_6 represents an alkylene group having 1 to 6 carbon atoms. Mention may be made, for example, of the products sold by the
- 15 Company Inolex under the name "Lexein® QX 3000", called "Cocotrimonium Collagen Hydrolysate" in the CTFA dictionary.

- Mention may also be made of quaternized plant proteins, such as wheat, maize or soya proteins:
- 20 mention may be made, as quaternized wheat proteins, of those sold by the Company Croda under the names "Hydrotriticum WQ or QM", called "Cocodimonium Hydrolysed Wheat Protein" in the CTFA dictionary, "Hydrotriticum QL", called "Laurdimonium Hydrolysed
- 25 Wheat Protein" in the CTFA dictionary or "Hydrotriticum

QS", called "Stearidimonium Hydrolysed Wheat Protein" in the CTFA dictionary.

The polymers of the polyamine, polyamidoamide or poly(quaternary ammonium) type which can be used in accordance with the present invention which can be mentioned in particular are those disclosed in French Patents No. 2,505,348 or 2,542,997. Mention may be made, among these polymers, of:

(1) optionally quaternized vinylpyrrolidone/dialkyl-aminoalkyl acrylate or methacrylate copolymers, such as the products sold under the name "Gafquat" by the Company ISP, such as, for example, Gafquat® 734, 755 or HS100, or else the product "Copolymer 937". These polymers are disclosed in detail in French Patents

15 2,077,143 and 2,393,573.

(2) cellulose ether derivatives comprising quaternary ammonium groups disclosed in French Patent 1,492,597 and in particular the polymers sold under the names "JR®" (JR® 400, JR® 125, JR® 30M) or "LR®" (LR® 400, 20 LR® 30M) by the Company Union Carbide Corporation.

These polymers are also defined in the CTFA dictionary as quaternary ammoniums of hydroxyethylcellulose which has reacted with an epoxide substituted by a trimethyl-ammonium group.

25 (3) cationic cellulose derivatives, such as the copolymers of cellulose or the cellulose derivatives grafted with a water-soluble quaternary ammonium monomer and disclosed in particular in Patent US

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4,131,576, such as hydroxyalkyl celluloses, for example hydroxymethyl-, hydroxyethyl- or hydroxypropyl celluloses, grafted in particular with a methacryloyloethyltrimethylammonium, methacrylmido-
5 propyltrimethylammonium or diallyldimethylammonium salt.

The marketed products corresponding to this definition are more particularly the products sold under the name "Celquat® L 200" and "Celquat® H 100" by
10 the Company National Starch.

(4) the cationic polysaccharides disclosed more particularly in Patents US 3,589,578 and 4,031,307, such as guar gums comprising cationic trialkylammonium groups. Use is made, for example, of guar gum modified
15 by a 2,3-epoxypropyltrimethylammonium salt (for example, chloride).

Such products are sold in particular under the trade names of Jaguar® C13 S, Jaguar® C 15, Jaguar® C 17 or Jaguar® C162 by the Company Meyhall.

20 (5) polymers composed of piperazinyl units and of divalent, straight- or branched-chain alkylene or hydroxyalkylene radicals, optionally interrupted by oxygen, sulphur or nitrogen atoms or by aromatic or heterocyclic rings, as well as the oxidation and/or
25 quaternization products of these polymers. Such polymers are disclosed in particular in French Patents 2,162,025 and 2,280,361.

(6) water-soluble polyaminoamides prepared in particular by polycondensation of an acidic compound with a polyamine; these polyaminoamides can be crosslinked by an epihalohydrin, a diepoxide, a dianhydride, an unsaturated dianhydride, a bisunsaturated derivative, a bishalohydrin, a bisazetidinium, a bishaloacyldiamine or an alkyl bishalide or alternatively by an oligomer resulting from the reaction of a bifunctional compound reactive with respect to a bishalohydrin, a bisazetidinium, a bishaloacyldiamine, an alkyl bishalide, an epihalohydrin, a diepoxide or a bisunsaturated derivative; the crosslinking agent being used in proportions ranging from 0.025 to 0.35 mol per amine group of the polymaoamide; these polyaminoamides can be alkylated or, if they comprise one or more tertiary amine functional groups, quaternized. Such polymers are disclosed in particular in French Patents 2,252,840 and 2,368,508.

(7) polyaminoamide derivatives resulting from the condensation of polyalkylenepolyamines with polycarboxylic acids, followed by an alkylation by bifunctional agents. Mention may be made, for example, of adipic acid/diakylaminohydroxyalkyldialylenetriamine polymers in which the alkyl radical comprises from 1 to 4 carbon atoms and preferably denotes methyl, ethyl or propyl. Such polymers are disclosed in particular in French Patent 1,583,363.

Mention may more particularly be made, among these derivatives, of the adipic acid/dimethylamino-hydroxypropyl/diethylenetriamine polymers sold under the name "Cartaretine® F, F4 or F8" by the Company

5 Sandoz.

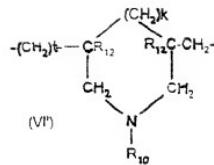
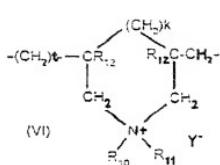
(8) polymers obtained by reaction of a polyalkylene-polyamine comprising two primary amine groups and at least one secondary amine group with a dicarboxylic acid chosen from diglycolic acid and saturated

10 aliphatic dicarboxylic acids having from 3 to 8 carbon atoms. The molar ratio of polyalkylenepolyamine to dicarboxylic acid being between 0.8:1 and 1.4:1; the polyaminoamide resulting therefrom being brought to react with epichlorohydrin in a molar ratio of
15 epichlorohydrin in relation to the secondary amine group of the polyaminoamide of between 0.5:1 and 1.8:1. Such polymers are disclosed in particular in United States Patents 3,227,615 and 2,961,347.

Polymers of this type are in particular sold
20 under the name "Hercosett® 57" by the Company Hercules Inc. or else under the name of "PD 170" or "Delsette® 101" by the Company Hercules in the case of the adipic acid/epoxypropyl/diethylenetriamine copolymer.

(9) cyclohomopolymers of methyldiallylamine or of
25 dimethyldiallylammonium, such as the homopolymers or copolymers comprising, as main constituent of the chain, units corresponding to the formulae (VI) or (VI'):

00000000000000000000000000000000



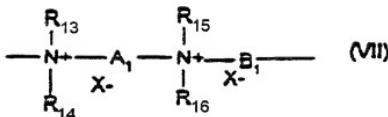
in which formulae k and t are equal to 0 or 1, the sum k + t being equal to 1; R₁₂ denotes a hydrogen atom or a methyl radical; R₁₀ and R₁₁, independently of one

- 5 another, denote an alkyl group having from 1 to 22 carbon atoms, a hydroxyalkyl group in which the alkyl group preferably has 1 to 5 carbon atoms or a lower amidoalkyl group or R₁₀ and R₁₁ can denote, jointly with the nitrogen atom to which they are attached,
- 10 heterocyclic group, such as piperidinyl or morpholinyl; Y⁻ is an anion, such as bromide, chloride, acetate, borate, citrate, tartrate, bisulphate, bisulphite, sulphate or phosphate. These polymers are disclosed in particular in French Patent 2,080,759 and in its
- 15 Certificate of Addition 2,190,406.

Mention may more particularly be made, among the polymers defined above, of homopolymers of diallyldimethylammonium chloride with a number-average molecular mass (M_n) of between 5000 and 200,000 and

- 20 more particularly with an M_n of between 6000 and 20,000.

(10) the quaternary diammonium polymer comprising repeat units corresponding to the formula:

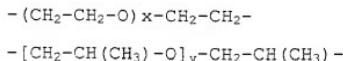


in which formula (VII):

- R_{13} , R_{14} , R_{15} and R_{16} , which are identical or different, represent aliphatic, alicyclic or arylaliphatic radicals comprising from 1 to 20 carbon atoms or lower hydroxyalkyl aliphatic radicals or else R_{13} , R_{14} , R_{15} and R_{16} , together or separately, form, with the nitrogen atoms to which they are attached, heterocycles optionally comprising a second heteroatom other than nitrogen or else R_{13} , R_{14} , R_{15} and R_{16} represent a linear or branched C_{1-6} alkyl radical substituted by a nitrile, ester, acyl, amide or $-\text{CO}-\text{O}-\text{R}_{17}-\text{D}$ or $-\text{CO}-\text{NH}-\text{R}_{17}-\text{D}$ group, where R_{17} is an alkylene and D a quaternary ammonium group;
- 15 A_1 and B_1 represent polymethylene groups comprising from 2 to 20 carbon atoms which can be linear or branched and saturated or unsaturated, and which can comprise, bonded to or inserted into the main chain, one or more aromatic rings or one or more oxygen atoms or sulphur atoms or sulphoxide, sulphone, disulphide, amino, alkylamino, hydroxyl, quaternary ammonium, ureido, amide or ester groups, and
- 20 X^- denotes an anion derived from an inorganic or organic acid;

Al, R₁₃ and R₁₅ can form, with the two nitrogen atoms to which they are attached, a piperazine ring; in addition, if Al denotes a linear or branched, saturated or unsaturated alkylene or hydroxyalkylene radical, B1
 5 can also denote a (CH₂)_n-CO-D-OC-(CH₂)_n- group
 in which D denotes:

a) a glycol residue of formula: -O-Z-O-, where Z denotes a linear or branched hydrocarbon-comprising radical or a group corresponding to one of the
 10 following formulae:



where x and y denote an integer from 1 to 4, representing a defined and unique degree of
 15 polymerization, or any number from 1 to 4 representing a mean degree of polymerization;

b) a bis-secondary diamine residue, such as a piperazine derivative;

c) a bisprimary diamine residue of formula:
 20 -NH-Y-NH-, where Y denotes a linear or branched hydrocarbon-comprising radical or else the divalent radical



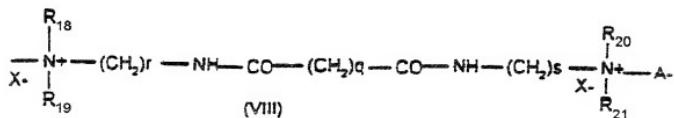
d) a ureylene group of formula: -NH-CO-NH-;
 25 Preferably, X⁻ is an anion, such as chloride or bromide.

These polymers have a number-average molecular mass generally of between 1000 and 100,000.

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Polymers of this type are disclosed in particular in French Patents 2,320,330, 2,270,846, 2,316,271, 2,336,434 and 2,413,907 and US Patents 2,273,780, 2,375,853, 2,388,614, 2,454,547, 3,206,462, 5 2,261,002, 2,271,378, 3,874,870, 4,001,432, 3,929,990, 3,966,904, 4,005,193, 4,025,617, 4,025,627, 4,025,653, 4,026,945 and 4,027,020.

(11) polymers of poly(quaternary ammonium) composed of units of formula (VIII):



10

in which formula:

R₁₈, R₁₉, R₂₀ and R₂₁, which are identical or different, represent a hydrogen atom or a methyl, ethyl, propyl, β-hydroxyethyl, β-hydroxypropyl or 15 -CH₂CH₂(OCH₂CH₂)_pOH radical,

where p is equal to 0 or to an integer of between 1 and 6, with the proviso that R₁₈, R₁₉, R₂₀ and R₂₁ do not simultaneously represent a hydrogen atom,

20 r and s, which are identical or different, are integers of between 1 and 6,

q is equal to 0 or to an integer of between 1 and 34,

X denotes a halogen atom,

A denotes a radical from a dihalide or preferably 25 represents -CH₂-CH₂-O-CH₂-CH₂-.

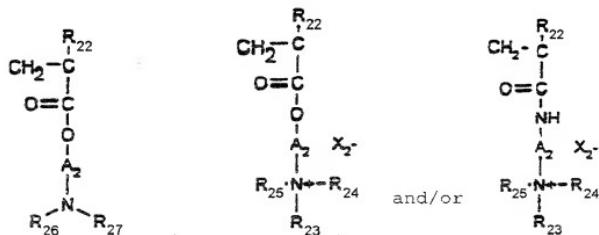
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Such compounds are disclosed in particular in Patent Application EP-A-122,324.

Mention may be made among these, for example, of the products "Mirapol A 15", "Mirapol® AD1",

- 5 "Mirapol® AZ1" and "Mirapol® 175", sold by the company
Miranol.

(12) homopolymers or copolymers derived from acrylic or methacrylic acids and comprising units:



- 10 in which the R₂₂ groups independently denote H or CH₃,
the A₁ groups independently denote a linear
or branched alkyl group of 1 to 6 carbon atoms or a
hydroxylalkyl group of 1 to 4 carbon atoms,
the R₂₃, R₂₄ and R₂₅ groups, which are
15 identical or different, independently denote an alkyl
group of 1 to 18 carbon atoms or a benzyl radical,
the R₂₆ and R₂₇ groups represent a hydrogen
atom or an alkyl group of 1 to 6 carbon atoms,
X₂⁻ denotes an anion, for example methyl
20 sulphate or halide, such as chloride or bromide.

The comonomer or comonomers which can be used
in the preparation of the corresponding copolymers

belong to the family of acrylamides, methacrylamides, diacetone acrylamides, acrylamides and methacrylamides substituted at the nitrogen by lower alkyl, alkyl esters, of acrylic or methacrylic acids, vinyl-
5 pyrrolidone or vinyl esters.

(13) quaternary polymers of vinylpyrrolidone and vinylimidizole, such as, for example, the products sold under the names Luviquat® FC 905, FC 550 and FC 370 by the Company B.A.S.F.

10 (14) polyamines, such as Polyquart® H sold by Henkel, referenced under the name "Polyethylene Glycol (15) Tallow Polyamine" in the CTFA dictionary.

(15) crosslinked polymers of methacryloyloxyethyltrimethylammonium salt (for example chloride), such as the
15 polymers obtained by homopolymerization of dimethylaminoethyl methacrylate quaternized by methyl chloride or by copolymerization of acrylamide with dimethylaminoethyl methacrylate quaternized by methyl chloride, the homo- or copolymerization being followed

20 by a crosslinking by a compound possessing olefinic unsaturation, in particular methylenebisacrylamide or pentaerythritol methacrylate. Use may more particularly be made of a crosslinked acrylamide/methacryloyloxyethyltrimethylammonium chloride (20/80 by weight)

25 copolymer in the form of a dispersion comprising 50% by weight of the said copolymer in mineral oil. This dispersion is sold under the name of "Salcare® SC 92" by the Company Allied Colloids. Use may also be made of

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a crosslinked homopolymer of methacryloyloxyethyltrimethylammonium chloride comprising approximately 50% by weight of the homopolymer in mineral oil. This dispersion is sold under the name of "Salcare® SC 95" 5 by the Company Allied Colloids.

Other cationic polymers which can be used in the context of the invention are polyalkyleneimines, in particular polyethyleneimines, polymers comprising vinylpyridine or vinylpyridinium units, condensates of 10 polyamines and of epichlorohydrin, quaternary polyureylenes and chitin derivatives.

According to the invention, use may more particularly be made of polymers chosen from Mirapol, the compound of formula (VII) in which R₁₃, R₁₄, R₁₅ and 15 R₁₆ represent the methyl radical, A₁ represents the radical of formula -(CH₂)₃- and B₁ represents the radical of formula -(CH₂)₆- and X⁻ represents the chloride anion and the compound of formula (VII) in which R₁₃ and R₁₄ represent the ethyl radical, R₁₅ and R₁₆ 20 represent the methyl radical, A₁ and B₁ represent the radical of formula -(CH₂)₃- and X⁻ represents the bromide anion.

Among all the cationic polymers capable of being used in the context of the present invention, it 25 is preferable to employ quaternary cellulose ether derivatives, such as the products sold under the name "JR® 400" by the Company Union Carbide Corporation, cyclopolymers, in particular the homopolymers of

diallyldimethylammonium chloride sold under the name "Merquat® 100" and its homologues of lower molecular weight, and the copolymers of diallyldimethylammonium chloride and of acrylamide sold under the names 5 "Merquat® 550" and "Merquat S" by the Company Merck, or cationic polysaccharides and more particularly the guar gum modified by 2,3-epoxypropyltrimethylammonium chloride sold under the name "Jaguar® C13S" by the Company Meyhall.

10 According to the invention, the cationic polymer or polymers can represent from 0.001% to 10% by weight, preferably from 0.005% to 5% by weight and more preferably still from 0.01 % to 3% by weight of the total weight of the final composition.

15 (ii) Amine-comprising silicones

(1) Amine-comprising silicones

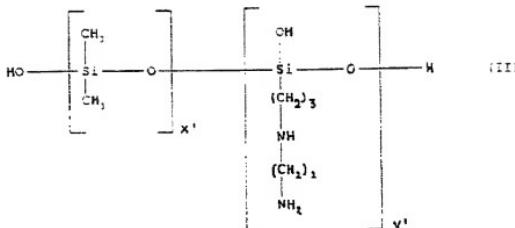
The amine-comprising silicone according to the invention have a weight-average molecular mass of between 11,000 and 25,000.

20 According to the invention, the term "amine-comprising silicone" denotes any silicone comprising at least one primary, secondary or tertiary amine or one quaternary ammonium group.

Mention may thus be made of:

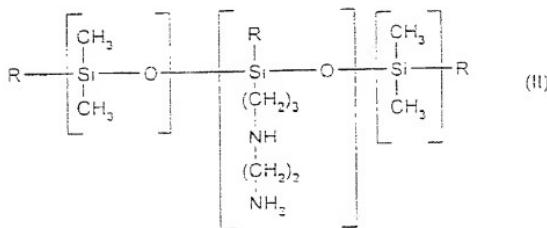
25 (a) polysiloxanes called "amodimethicone" in the CTFA dictionary (4th ed., 1991) and corresponding to the formula:

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in which x' and y' are integers which depend on the weight-average molecular mass, such that the said molecular mass is between 11,000 and 25,000,

- 5 (b) polysiloxanes called "amodimethicone" in the CTFA dictionary (7th ed., 1997) and corresponding to the formula:

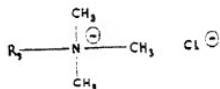


in which R denotes OH or methyl,

- 10 the weight-average molecular mass being between 11,000 and 25,000.

When these amine-comprising silicones are employed, a particularly advantageous embodiment is their use in the form of an oil-in-water emulsion. The 15 surfactants can be of any nature but are preferably cationic and/or nonionic. Use may be made, for example,

of the product sold under the name "Silsoft TP515
Silicone Emulsion" by the Company OSI, which comprises,
in addition to amodimethicone, a cationic surfactant
comprising a mixture of products corresponding to the
5 formula



in which R_9 denotes alkenyl and/or alkyl radicals having
from 12 to 20 carbon atoms and preferably 16 carbon
atoms,

- 10 in combination with a nonionic surfactant known under
the name " $\text{C}_{11}\text{-C}_{15}$ Pareth-15", which is a mixture of
 $\text{C}_{11}\text{-C}_{15}$ fatty alcohols polyoxyethylenated on average with
15 mol of ethylene oxide.

The mean size of the silicone particles in
15 the emulsion is generally between 30 nm and 2 microns,
preferably between 0.1 and 0.5 microns and more
particularly between 0.1 and 0.3 microns.

The weight-average molecular masses of these
amine-comprising silicones are measured by gel
20 permeation chromatography (GPC) at room temperature as
polystyrene equivalent. The columns used are μ styragel
columns. The eluent is THF and the flow rate is
1 ml/min. 200 μl of a 0.5% by weight solution of
silicone in THF are injected. Detection is carried out
25 by refractometry and UVmetry.

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The compositions in accordance with the invention comprise the amine-comprising silicones defined above at contents by weight which can be between 0.05% and 10%, preferably between 0.1% and 7% and more preferably still between 0.2% and 5% with respect to the total weight of the composition.

The vehicle, or carrier, of the detergent compositions according to the invention is preferably water or an aqueous/alcoholic solution of a lower alcohol, such as ethanol, isopropanol or butanol.

The detergent compositions according to the invention exhibit a final pH generally of between 3 and 10. This pH is preferably between 5 and 8. The adjustment of the pH to the desired value can be
15 carried out conventionally by addition of a base (organic or inorganic) to the composition, for example aqueous ammonia, sodium hydroxide or a primary, secondary or tertiary (poly)amine, such as monoethanolamine, diethanolamine, triethanolamine,
20 isopropanolamine or 1,3-propanediamine, or alternatively by addition of an acid, preferably a carboxylic acid, such as, for example, citric acid.

The detergent compositions according to the invention can, of course, additionally comprise all the usual adjuvants, such as, for example, fragrances, preservatives, sequestering agents, thickeners, softeners, foam-modifying agents, colorants, pearlescent agents, moisturizing agents, antidandruff

or antiseborrhoeic agents, vitamins, silicone or non-silicone sunscreens, suspending agents, proteins, silicones, ceramides, pseudoceramides, fatty acids with linear or branched C₁₆-C₄₀ chains, hydroxy acids,
5 electrolytes, polymers and others.

Of course, a person skilled in the art will take care to choose this or these possible additional compounds and/or their amounts so that the advantageous properties intrinsically attached to the combination

10 (washing base + cationic polymer + a specific silicone) in accordance with the invention are not, or not substantially, detrimentally affected by the envisaged addition or additions.

These compositions can be provided in the
15 form of more or less thickened liquids, of creams or of gel and they are mainly suitable for washing, caring for and/or styling the hair.

When the compositions in accordance with the invention are employed as conventional shampoos, they
20 are simply applied to wet hair and the foam generated by massaging or rubbing with the hands is then removed, after an optional period of rest, by rinsing with water, it being possible for the operation to be repeated one or more times.

25 Another subject-matter of the invention is a process for washing and for conditioning keratinous substances, such as the hair, which consists in applying, to the said wetted fibres, an effective

amount of a composition as defined above and in then rinsing with water, after an optional period of rest.

As indicated above, the compositions in accordance with the invention confer on the hair, after 5 rinsing, a notable styling effect which is expressed in particular by an ease of styling and of form retention, as well as a contribution of body and of lightness, which are markedly improved.

A concrete but in no way limiting example 10 illustrating the invention will now be given.

EXAMPLE

Two shampoo compositions were prepared, one in accordance with the invention (composition A) and 15 the other comparative (composition B):

| | <u>A</u> Invention | <u>B</u> Comparative |
|--|-----------------------|-------------------------|
| - Sodium lauryl ether sulphate (70/30 C12/C14) comprising 2.2 mol of ethylene oxide as an aqueous solution comprising 28% of AM (AM = active material) | 14 g AM | 14 g AM |
| - Miranol C2M Conc(*) | 3.6 g AM | 3.6 g AM |
| - Cationic polymer (**) | 0.2 g | 0.2 g |
| - Amine-comprising silicone according to the invention (***) | 2.45 g AM | -- |
| - Amine-comprising silicone (****) | -- | 2.45 g |
| - Mixture of 1-(hexadecyloxy)octadodecanol and of cetyl alcohol | 2.5 g | 2.5 g |
| - Monoisopropanolamide of copra acids | 0.8 g | 0.8 g |
| - Citric acid, q.s. pH | 5 | 5 |
| - Demineralized water, q.s. | 100 g | 100 g |

(*): Sodium cocoamidoethyl(N-hydroxyethyl-N-carboxymethyl)glycinate, sold by Rhône-Poulenc

(**): Guar gum modified by 2,3-epoxypropyltrimethylammonium chloride, sold under the name Jaguar® C13 S by the company Rhône-Poulenc

(***): Amodimethicone with a weight-average molecular mass of approximately 15,000, sold as a cationic emulsion with an active material content of 35% under the name Silsoft® TP515 Silicone Emulsion" by the Company OSI.

(****): Amodimethicone with a weight-average molecular mass of approximately 50,000, sold as a cationic emulsion with an active material content of 35% under the name Fluid DC 939 by the Company Dow Corning.

Shampooing is carried out by applying approximately 12 g of the composition A to sensitive hair which has been wetted beforehand. The shampoo is made to foam and then copious rinsing is carried out with water.

The same procedure is carried out as above with the comparative composition B.

A panel of experts evaluates the disentangling of the dried hair and the softness, the body, the feel and the sleekness of the dried hair.

All the experts indicate a marked improvement in these properties for the hair treated with the composition A according to the invention.

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CLAIMS

1. Detergent and conditioning compositions, characterized in that it comprises, in a cosmetically acceptable medium, (A) a washing base and (B) a conditioning system comprising at least one cationic polymer and at least one amine-comprising silicone with a weight-average molecular mass of between 11,000 and 25,000.

10 2. Composition according to Claim 1, characterized in that the said washing base comprises one or more surfactants chosen from anionic, amphoteric, non-ionic, zwitterionic and cationic surfactants and their mixtures.

15 3. Composition according to either one of Claims 1 and 2, characterized in that the said washing base is present at a content by weight of between 4% and 50% with respect to the total weight of the composition.

20 4. Composition according to Claim 3, characterized in that the said content is between 8% and 35%.

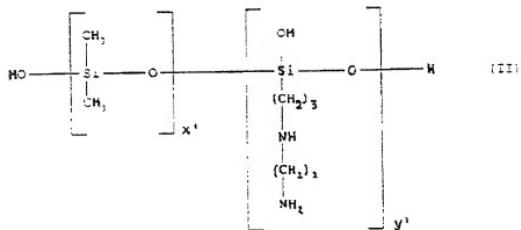
25 5. Composition according to Claim 4, characterized in that the said content is between 10% to 25%.

6. Composition according to any one of the preceding claims, characterized in that the said

cationic polymer is present at a content by weight of between 0.001% and 10% with respect to the total weight of the composition.

7. Composition according to any one of the
5 preceding claims, characterized in that the amine-
comprising silicone is chosen from:

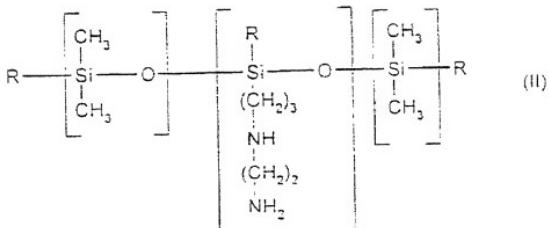
(a) polysiloxanes called "amodimethicone" in
the CTFA dictionary (4th ed., 1991) and corresponding
to the formula:



10

in which x' and y' are integers which depend on the weight-average molecular mass, such that the said molecular mass is between 11,000 and 25,000,

(b) polysiloxanes called "amodimethicone" in
15 the CTFA dictionary (7th ed., 1997) and corresponding
to the formula:



in which R denotes OH or methyl,

the weight-average molecular mass being between 11,000 and 25,000.

5 8. Composition according to any one of the preceding claims, characterized in that the said amine-comprising silicone is present in the form of an emulsion.

10 9. Composition according to any one of the preceding claims, characterized in that the said amine-comprising silicone is present at a content by weight of between 0.05% and 10% with respect to the total weight of the composition.

15 10. Composition according to any one of the preceding claims, characterized in that the said cationic polymer is chosen from quaternary cellulose ether derivatives, cyclopolymers, cationic polysaccharides and their mixtures.

20 11. Composition according to Claim 10, characterized in that the said cyclopolymer is chosen from homopolymers of diallyldimethylammonium chloride

and copolymers of diallyldimethylammonium chloride and of acrylamide.

12. Composition according to Claim 10, characterized in that the said quaternary cellulose ether derivatives are chosen from hydroxyethylcelluloses which have reacted with an epoxide substituted by a trimethylammonium group.

13. Composition according to Claim 10, characterized in that the said cationic polysaccharides 10 are chosen from guar gums modified by a 2,3-epoxypropyltrimethylammonium salt.

14. Composition according to any one of the preceding claims, characterized in that it exhibits a pH of between 3 and 10.

15. Use of a composition as defined in any one of the preceding claims for cleaning and/or conditioning the hair.

16. Process for washing and for conditioning keratinous substances, such as the hair, which consists 20 in applying, to the said wetted substances, an effective amount of a composition as defined in any one of Claims 1 to 14 and in then rinsing with water, after an optional period of rest.

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Declaration and Power of Attorney for Patent Application

Déclaration et Pouvoir pour Demand de Brevet

French Language Declaration

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que:

As a below named inventor, I hereby declare that:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

My residence, post office address and citizenship are as stated next to my name.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

DETERGENT COSMETIC COMPOSITIONS AND USE

the specification of which is attached hereto unless the following box is checked:

- was filed on September 9, 1998 as United States Application Number or PCT International Application Number PCT/FR98/01922 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

Je reconnaiss devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

French Language Declaration

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, en cochant la case, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign application(s)
Demande(s) de brevet antérieure(s)

| | |
|----------------------|-------------------------------|
| 97/11958 (Numéro) | France (Country) (Pays) |
| (Number) (Numéro) | (Country) (Pays) |

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

| | |
|--------------------------------------|----------------------------------|
| (Application No.) (N° de demande) | (Filing Date) (Date de dépôt) |
| (Application No.) (N° de demande) | (Filing Date) (Date de dépôt) |

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnaissu devoir divulguer toute information pertinente à la prévetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont laquelle est devenue disponible entre la date de dépôt de la demande antérieure, et la date de dépôt de la demande nationale ou internationale PCT de la présente demande:

| | |
|--------------------------------------|----------------------------------|
| (Application No.) (N° de demande) | (Filing Date) (Date de dépôt) |
| (Application No.) (N° de demande) | (Filing Date) (Date de dépôt) |

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, vérifiable et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour vérifiable, et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International Application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed
Droit de priorité non revendiqué

| | |
|--|--------------------------|
| 25 September 1997 (Day/Month/Year Filed) (Jour/Mois/Anné de dépôt) | <input type="checkbox"/> |
| (Day/Month/Year Filed) (Jour/Mois/Anné de dépôt) | <input type="checkbox"/> |

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International Application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International Application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose any or all information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

| |
|---|
| (Status) (patented, pending, abandoned) (Status) (breveté, en cours d'examen, abandonné) |
| (Status) (patented, pending, abandoned) (Status) (breveté, en cours d'examen, abandonné) |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

French Language Declaration *

PÔUVOIRS: En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'ils poursuive(nt) la procédure de cette demande de brevet et traite(nt) toute affaire s'y rapportant avec L'Office des brevets et des marques: (*mentionner le nom et le numéro d'enregistrement*).

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this patent application and transact all business in the Patent and Trademark Office connected therewith: (*list name and registration number*):

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P., Reg. No. 22,540, Douglas B. Henderson, Reg. No. 20,291; Ford F. Farabow, Jr., Reg. No. 20,630; Arthur S. Garrett, Reg. No. 20,338; Donald R. Dunner, Reg. No. 19,073; Brian G. Brunsvoold, Reg. No. 22,593; Tipton D. Jennings, IV, Reg. No. 20,645; Jerry D. Voight, Reg. No. 23,020; Laurence R. Heftet, Reg. No. 20,827; Kenneth E. Payne, Reg. No. 23,098; Herbert H. Mintz, Reg. No. 26,691; C. Larry O'Rourke, Reg. No. 26,014; Albert J. Santorelli, Reg. No. 22,610; Michael C. Elmer, Reg. No. 25,857; Richard H. Smith, Reg. No. 20,609; Stephen L. Peterson, Reg. No. 26,325; John M. Romary, Reg. No. 26,331; Bruce C. Zottler, Reg. No. 27,680; Dennis P. O'Reilly, Reg. No. 27,932; Allen M. Sokal, Reg. No. 26,695; Robert D. Bajeksky, Reg. No. 25,387; Richard L. Stroup, Reg. No. 28,478; David W. Hill, Reg. No. 28,220; Thomas L. Irving, Reg. No. 28,619; Charles E. Lipsey, Reg. No. 28,165; Thomas W. Winland, Reg. No. 27,605; Basil J. Lewis, Reg. No. 28,818; Martin I. Fuchs, Reg. No. 28,508; E. Robert Yoches, Reg. No. 30,120; Barry W. Graham, Reg. No. 29,924; Susan Haberman Griffen, Reg. No. 30,907; Richard B. Racine, Reg. No. 30,415; Thomas H. Jenkins, Reg. No. 30,857; Robert E. Converse, Jr., Reg. No. 27,432; Clair X. Mullen, Jr., Reg. No. 20,348; Christopher P. Foley, Reg. No. 31,354; John C. Paul, Reg. No. 30,413; Roger D. Taylor, Reg. No. 28,992; David M. Kelly, Reg. No. 30,953; Kenneth J. Meyers, Reg. No. 25,146; Carol P. Einaudi, Reg. No. 32,220; Walter Y. Boyd, Jr., Reg. No. 31,738; Steven M. Anzalone, Reg. No. 32,095; Jean B. Fordis, Reg. No. 32,984; Barbara C. McCurdy, Reg. No. 32,120; James K. Hammond, Reg. No. 31,964; Richard V. Burgoian, Reg. No. 31,744; J. Michael Jakes, Reg. No. 32,824; Dirk D. Thomas, Reg. No. 32,600; Thomas W. Banks, Reg. No. 32,719; Christopher P. Isaac, Reg. No. 32,616; Bryan C. Diner, Reg. No. 32,409; M. Paul Barker, Reg. No. 32,013; Andrew Chanko Sonu, Reg. No. 33,457; David S. Forman, Reg. No. 33,694; Vincent P. Kovalcik, Reg. No. 32,867; James W. Edmondson, Reg. No. 33,871; Michael R. McGurk, Reg. No. 32,045; Joann M. Neth, Reg. No. 36,363; Gerson S. Panitch, Reg. No. 33,751; Cheri M. Taylor, Reg. No. 33,216; Charles E. Van Horn, Reg. No. 40,266; Linda A. Wadler, Reg. No. 33,218; Jeffrey A. Berkowitz, Reg. No. 36,743; Michael R. Kelly, Reg. No. 33,921; and James B. Monroe, Reg. No. 33,971; and Thalia V. Warmement, Reg. No. 39,064; Michele C. Bosch, Reg. No. 40,524; Allen R. Jensen, Reg. No. 28,224; Mark D. Sweet, Reg. No. 41,469; and Anthony M. Gutowski, Reg. No. 38,742.

Addresser toute correspondance à:

Send all Correspondence to:

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
1300 I Street, N.W., Washington, D.C. 20005.
Telephone No. (202) 408-4000.

Addresser tout appel téléphonique à:
(nom et numéro de téléphone)

Direct all Telephone Calls to:
(name and telephone number)

Thomas L. Irving, Reg. No. 28,619
Telephone Number (202) 408-4082

| | | | |
|---|--|---|--------------------|
| Nom complet de l'unique ou premier inventeur: | | Full name of sole or first inventor <u>Sandrine DECOSTER</u> | |
| Signature de l'inventeur | Date | Inventor's signature <u>S. DECOSTER</u> | Date 23/03/2000 |
| Domicile | Residence 107, avenue d'Enghien F-93800, Epinay-sur-Seine, France <u>FRY</u> | | |
| Nationalité: | Citizenship French | | |
| Adresse postale: | Post Office Address Same as residence | | |
| Nom complet de l'unique ou premier inventeur: | | Full name of second inventor <u>Bernard BEAUVILLE</u> | |
| Signature de l'inventeur | Date | Inventor's signature <u>B. BEAUVILLE</u> | Date 23/03/2000 |
| Domicile | Residence 40, rue Gaston Paymal F-92110 Clichy, France <u>FRY</u> | | |
| Nationalité: | Citizenship French | | |
| Adresse postale: | Post Office Address Same as residence | | |